to make decisions based on experience and accurate observation. Children cannot tolerate prolonged anesthesia or formidable surgical procedure as well as adults. Rough technique, which is undesirable, but may be passable in adult surgery, will more often lead to disaster in children. The chemical and metabolic processes progress with greater speed in children than in adults. They will develop shock, acidosis or other chemical disturbances with amazing speed, and must be watched clinically more closely than adults. Their delicate tissues must be handled with great gentleness, and the best results follow if the surgeon is able to do the operation efficiently and quickly. Close coöperation with pediatrician is essential.

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BISMUTH TOXIC REACTIONS

At the present time, bismuth ranks equal in importance and frequency of use in the treatment of syphilis, with arsphenamin. Yet the toxic effects and reactions of bismuth are much less frequently discussed, possibly because they are less frequently observed than those of arsenicals, and partly because of the more recent introduction of bismuth into therapeutics. However, with the accumulation of clinical observations, a clearer picture is obtained of the possible toxic effects of bismuth therapy. A good, comprehensive review of the subject is presented by Irgang, Alexander, and Sala of New York (*Archives, Dermatology and Syphilology,* 21:321, 1933).

A number of useful practical observations and clinical deductions are offered. One of them is that the rate of improvement of syphilitic skin lesions, from soluble bismuth preparations, exceeds only by a very slight margin that of the insolubles. In other words, insoluble preparations, having about the same quotient of efficiency should be preferred, being the safer of the two because of the slower absorption. Of the soluble salts, bismuth tartrate is regarded as the most effective; of the insoluble salts, bismuth salicylate. Intravenous administration of bismuth is cautioned against, as being extremely dangerous.

An interesting statement is that small doses are just as effective as large ones, provided the ionization of the bismuth molecule is of sufficient extent. Bismuth is more toxic to the kidneys than to the liver. Unlike arsenicals, bismuth does not tend to aggravate the existing hepatitis. In the presence of impaired renal function, injections of bismuth must be stopped.

With a rising systolic blood pressure over 150 millimeters, and of diastolic above 100 millimeters present, bismuth injections should be discontinued until the functional capacity of kidneys is determined.

The most common complication of bismuth therapy is stomatitis and blue gum line. It was present practically in 100 per cent of cases, the only exception being patients with no teeth at all. In the case of a heavy gum line appearing after a few injections, the dosage should be reduced or treatment stopped. Besides the gingival type, two other types of buccal siderosis may be observed: (1) diffuse, thin, slate-colored pigmentation; (2) localized heavy, bluish-black deposit.

Contrary to the prevailing idea, complications are more frequent with soluble preparations, because they enter the blood stream in a shorter period of time; and since the rate of absorption is greater than that of excretion, there results a greater concentration and accumulation of bismuth in the tissues.

The development of stomatitis, however slight, is a definite indication for discontinuing treatment. In cases of severe stomatitis, sodium thiosulphate should be started from small doses, slowly increasing, since the large doses, liberating large amounts of bismuth from the tissues, may aggravate the symptoms.

Skin manifestations of bismuth intolerance can assume urticarial, eczematous pityriasis rosea-like, and lichen planus pemphygoid types. Paradoxically, and in contradistinction to arsenicals, bismuth eruptions, according to the authors, improve with continuation of injections.

As to the local reactions, which occur mostly in females, water-soluble bismuth preparations produce greater local inflammation and pain. Bismuth salicylate and quinin bismuth iodid (in my experience, also iodobismuthol) proved to be the least irritating locally.

Urinary casts, even in large numbers, are no contraindication to bismuth therapy, provided the kidney function is within normal limits. Total weekly dose of an oil-soluble compound should be about 100 milligrams of metallic bismuth. But 10 per cent suspension of bismuth salicylate in a vegetable oil is the most effective preparation.

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Vitamins and Hormones.—Kühnau and Stepp discuss the relations between vitamins and hormones. Recently it has been shown that the animal cell participates in the preparation of vitamins and that the exogenic origin, formerly assumed as self-evident, can no longer be considered a characteristic quality of the vitamins. There are interrelations and transitional states between vitamins and hormones. The knowledge about the interrelations between vitamins and hormones has been advanced by chemical studies and by biologic experiments. It has been found that the relation between fat soluble vitamins and the hormones of the gonads is based on their chemical relationship. The authors illustrate this with structural formulas. They cite biologic observations on the correlations between vitamins A and B, the thyroid and iodin metabolism. Vitamin B influences thyroidal action, and under normal conditions there seems to be a relation between the suprarenal cortex, the thyroid and vitamin B. The authors discuss the influence of vitamins A and E on the sexual functions, the relations between the anterior lobe of the hypophysis and vitamin E, and the synergism of vitamin D and the hormone of the parathyroids.—***Münchener medizinische Wochenschrift.***